4164-01-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA-2016-N-3120]

Kremers Urban Pharmaceuticals Inc.; Proposal to Withdraw Approval of an Abbreviated New

Drug Application for Extended-Release Methylphenidate Tablets; Opportunity for a Hearing

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration's (FDA or Agency) Center for Drug

Evaluation and Research (CDER) is proposing to withdraw approval of an abbreviated new drug

application (ANDA) for methylphenidate hydrochloride (HCl) extended-release (ER) tablets and

is announcing an opportunity for the holder of the ANDA to request a hearing on this proposal.

DATES: Kremers Urban Pharmaceuticals Inc., may submit a request for a hearing by [INSERT]

DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Submit

all data, information, and analyses upon which the request for a hearing relies by [INSERT

DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Submit

written or electronic comments by [INSERT DATE 60 DAYS AFTER DATE OF

PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: The request for a hearing may be submitted by Kremers Urban Pharmaceuticals

Inc., by either of the following methods:

Electronic Submissions

Submit electronic comments in the following way:

Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments to submit your request for a hearing. Your request for a hearing submitted electronically to http://www.regulations.gov, including any attachments to the request for hearing, will be posted to the docket unchanged.

Written/Paper Submissions

Submit written/paper submissions as follows:

 Mail/Hand delivery/Courier (for written/paper request for a hearing): Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852.

Because your request for a hearing will be made public, you are solely responsible for ensuring that your request does not include any confidential information that you may not wish to be publicly posted, such as confidential business information, e.g., a manufacturing process. The request for a hearing must include the Docket No. FDA-2016-N-3120 for "Kremers Urban Pharmaceuticals Inc.; Proposal to Withdraw Approval of an Abbreviated New Drug Application for Extended-Release Methylphenidate Tablets; Opportunity for a Hearing." The request for a hearing will be placed in the docket and publicly viewable at http://www.regulations.gov or at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

Kremers Urban Pharmaceutical Inc., may submit all data and analysis upon which the request for a hearing relies in the same manner as the request for a hearing except as follows:

• Confidential Submissions--To submit any data and analyses with confidential information that you do not wish to be made publicly available, submit your data and analyses only as a written/paper submission. You should submit two copies total of all data and analysis. One copy will include the information you claim to be

confidential with a heading or cover note that states "THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION." The Agency will review this copy, including the claimed confidential information, in its consideration of any decisions on this matter. The second copy, which will have the claimed information redacted/blacked out, will be available for public viewing and posted on http://www.regulations.gov or available at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday. Submit both copies to the Division of Dockets Management. Any information marked as "confidential" will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law.

<u>Comments Submitted by Other Interested Parties</u>: For all comments submitted by other interested parties you may submit comments as follows:

Electronic Submissions

Submit electronic comments in the following way:

• Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments. Comments submitted electronically to http://www.regulations.gov, including attachments, will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact

- information, or other information that identifies you in the body of your comments, that information will be posted on http://www.regulations.gov.
- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see "Written/Paper Submissions" and "Instructions").

Written/Paper Submissions

Submit written/paper submissions as follows:

- Mail/Hand delivery/Courier (for written/paper submissions): Division of Dockets
 Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm.
 1061, Rockville, MD 20852.
- For written/paper comments submitted to the Division of Dockets Management,
 FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in "Instructions."

Instructions: All submissions received must include the Docket No. FDA-2016-N-3120 for "Kremers Urban Pharmaceuticals Inc.; Proposal to Withdraw Approval of an Abbreviated New Drug Application for Extended-Release Methylphenidate Tablets; Opportunity for a Hearing." Received comments will be placed in the docket and, except for those submitted as "Confidential Submissions," publicly viewable at http://www.regulations.gov or at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

Confidential Submissions--To submit a comment with confidential information that
you do not wish to be made publicly available, submit your comments only as a
written/paper submission. You should submit two copies total. One copy will

include the information you claim to be confidential with a heading or cover note that states "THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION." The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on http://www.regulations.gov. Submit both copies to the Division of Dockets Management. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as "confidential." Any information marked as "confidential" will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA's posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at:

http://www.fda.gov/regulatoryinformation/dockets/default.htm.

<u>Docket</u>: For access to the docket to read background documents or the electronic and written/paper comments received, go to http://www.regulations.gov and insert the docket number, found in brackets in the heading of this document, into the "Search" box and follow the prompts and/or go to the Division of Dockets Management, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852.

FOR FURTHER INFORMATION CONTACT: Maryll W. Toufanian, Center for Drug Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 75, rm. 1716, Silver Spring, MD 20993-0002, 240-402-7944.

SUPPLEMENTARY INFORMATION:

I. Background

A. Approval of ANDA Referencing CONCERTA

CONCERTA (methylphenidate HCl) ER tablet is the subject of new drug application (NDA) 021121, held by Janssen Pharmaceuticals, Inc., and was approved on August 1, 2000. CONCERTA is a central nervous system stimulant intended for the treatment of attention deficit hyperactivity disorder in children 6 years of age and older, adolescents, and adults up to the age of 65. CONCERTA is a multiphasic modified-release product that is formulated to release a bolus of methylphenidate, resulting in an initial rapid rise in plasma concentration comparable to the effect of an immediate-release (IR) methylphenidate formulation, followed by sustained delivery later in the day, thereby allowing for once daily dosing. The relative bioavailability of CONCERTA in adults is comparable to IR methylphenidate administered three times daily, but the CONCERTA formulation minimizes the fluctuations between peak and trough concentrations associated with IR methylphenidate administered three times daily. CONCERTA is approved for the following strengths: 18 milligrams (mg), 27 mg, 36 mg, and 54 mg. CONCERTA was approved based on, among other things, safety studies and adequate and wellcontrolled clinical efficacy studies showing that the product is safe for its intended uses and has the effects claimed for it.

FDA's Office of Generic Drugs (OGD) approved ANDA 091695, held by Kremers

Urban Pharmaceuticals Inc. (Kremers), for a generic version of CONCERTA pursuant to the requirements of section 505(j) of the Federal Food, Drug, and Cosmetic Act (the FD&C Act) (21 U.S.C. 355(j)) and FDA's implementing regulations. OGD approved ANDA 091695 on July 9,

¹ The ANDA applicant was originally Kudco Ireland, Ltd.; subsequently, all rights to the ANDA were transferred to Kremers. For ease of reference, throughout this document, the ANDA holder will be referred to as Kremers.

2013, for the 18-mg and 27-mg strengths and approved the 36-mg and 54-mg strengths on September 23, 2013.

At the time of approval, FDA determined that the ANDA included data sufficient to demonstrate the bioequivalence of the Kremers product to CONCERTA. The bioequivalence (BE) testing and data submitted in the ANDA conformed to recommendations provided in a draft guidance for industry on "Methylphenidate hydrochloride." The draft guidance was issued on September 14, 2012 (77 FR 56851), and provided information and recommendations for establishing bioequivalence to CONCERTA that reflected FDA's understanding, at that time, of how to evaluate the pharmacokinetic (PK) properties of CONCERTA to support a demonstration of bioequivalence. The demonstration of bioequivalence was necessary to the approval of Kremers' product. Unlike CONCERTA, Kremers was not required to submit clinical studies to demonstrate the safety and effectiveness of its product. Instead, Kremers' ANDA was approved based on a finding that the product was bioequivalent to CONCERTA and met the other requirements for ANDA approval in section 505(j) of the FD&C Act.

B. Concerns About Insufficient Therapeutic Effect

1. ANDA 091695

Kremers began marketing the 18-mg and 27-mg strengths of its generic version of CONCERTA in August 2013 and began marketing the 36-mg and 54-mg strengths in October 2013. OGD routinely monitors all newly approved ANDA products for safety and efficacy concerns as they penetrate the marketplace, including the monitoring of adverse events reported to the Agency. Beginning in September 2013, the FDA Adverse Event Reporting System (FAERS) received reports describing insufficient therapeutic effect of the Kremers product,

particularly reports of insufficient effect later in the day.² These reports indicated potential therapeutic inequivalence of the Kremers product as compared to CONCERTA. In light of the reports received, CDER began an investigation of the Kremers product.³

2. CDER's Investigations

a. Tracked safety issue (TSI). CDER began its investigation of the Kremers product with a reevaluation of the data and information submitted in the application to demonstrate bioequivalence; an assessment of FAERS data; and a comparative analysis of the design, composition, dissolution, and active pharmaceutical ingredient (API) degradation of the generic product as compared to CONCERTA. The findings of these investigations led to the initiation of a TSI. In general, when CDER staff suspect that a potential safety issue could be significant, a TSI is opened and an interdisciplinary team assesses the safety issue, reevaluates the risk-benefit profile of the drug, and determines the need for further action. CDER considers postmarketing safety issues to be significant for tracking purposes if those issues have the potential to lead to, among other things, withdrawal of FDA approval of a drug application.

The initial meeting of the TSI Committee occurred in December 2013. The TSI Committee was composed of CDER physicians, pharmacists, and chemists, as well as other CDER scientists and experts, who carefully reviewed all of the data and information related to the Kremers product. Key information reviewed and discussed by the TSI Committee is summarized as follows.

² In addition to reports submitted to FAERS, FDA received complaints related to therapeutic failure from multiple other sources, including FDA's Detroit District Office and a director of anesthesia support at a children's hospital. ³ FDA investigated ANDA 091695 concurrently with ANDA 202608, which is another generic product referencing CONCERTA, held by Mallinckrodt Pharmaceuticals. Elsewhere in this issue of the <u>Federal Register</u>, FDA is proposing to withdraw approval of ANDA 202608.

- Adverse event reports. An analysis was conducted of FAERS reports, along with additional data regarding therapeutic failure provided by Kremers and Janssen (CONCERTA's NDA holder), to assess, among other things, the reporting rate for therapeutic failure for the Kremers product as compared to the reporting rate for therapeutic failure for the authorized generic version of CONCERTA marketed by Actavis plc. The reporting rate for therapeutic failure was found to be 67 per 100,000 person-years of exposure for the Kremers product and 7.0 per 100,000 person-years of exposure for the authorized generic drug product.
- Product composition. The Kremers product and CONCERTA were tested in FDA
 laboratories to evaluate differences in drug design, composition, stability, and dissolution.
 The testing identified concerns with API degradation and in vivo dissolution, which could result in differences in drug release. These differences could, in turn, result in differences in therapeutic effect of the generic product compared to CONCERTA.
- <u>BE data</u>. A review and reanalysis were conducted of the data that were submitted in the ANDA to establish bioequivalence to CONCERTA. In particular, an outlier analysis was performed on the BE data to evaluate the difference in product absorption between the

performed on the BE data to evaluate the difference in product absorption between the

⁴Authorized generic drug is defined in section 505(t) of the FD&C Act and in § 314.3(b) (21 CFR 314.3(b)) (Authorized generic drug means a listed drug, as defined in § 314.3(b), that has been approved under section 505(c) of the FD&C Act and is marketed, sold, or distributed directly or indirectly to retail class of trade with labeling, packaging (other than repackaging as the listed drug in blister packs, unit doses, or similar packaging for use in institutions), product code, labeler code, trade name, or trademark that differs from that of the listed drug.). A listed drug is a new drug product that has an effective approval under section 505(c) of the FD&C Act for safety and effectiveness, or under section 505(j), that has not been withdrawn or suspended under section 505(e)(1) through (e)(5) or (j)(5) of the FD&C Act, and that has not been withdrawn from sale for what FDA determines are reasons of safety or effectiveness (§ 314.3(b)). Listed drugs are identified as drugs with an effective approval in FDA's current edition of "Approved Drug Products With Therapeutic Equivalence Evaluations" (commonly referred to as the "Orange Book") (Id.). A list of currently available authorized generic drugs is available at http://www.fda.gov/AboutFDA/CentersOffices/OfficeofMedicalProductsandTobacco/CDER/ucm126391.htm. (FDA has verified the Web site addresses, as of the date this document publishes in the Federal Register, but Web sites are subject to change over time.)

Kremers product and CONCERTA across various PK sampling time-points. The analysis showed that the greatest difference in product absorption between the Kremers product and CONCERTA occurred at 8 hours post-dosing under fasting conditions.

The TSI was concluded in June 2014. Based on the information considered, the TSI

Committee determined that the Kremers product may deliver methylphenidate into the body at a slower rate than CONCERTA during the time period of 7 to 12 hours post-dosing, and therefore, the product may not be bioequivalent or therapeutically equivalent to CONCERTA. Following the TSI Committee's investigation, CDER concluded that the therapeutic equivalence (TE) rating for the Kremers product in FDA's "Approved Drug Products With Therapeutic Equivalence Evaluations" (commonly referred to as the "Orange Book") should be changed from AB to BX to indicate that the data are insufficient to determine that the Kremers product is therapeutically equivalent to CONCERTA.⁵

On November 6, 2014 (79 FR 65978), CDER issued a revised draft guidance for industry on "Bioequivalence Recommendations for CONCERTA (Methylphenidate Hydrochloride) Extended-Release Tablets" (revised draft BE guidance) (Ref. 1)), with recommendations for establishing bioequivalence to CONCERTA that reflect CDER's refined understanding of the relationship between the PK profile of CONCERTA and its therapeutic effect. The revised draft

In the Orange Book, FDA "classifies as therapeutically equivalent those products that meet the following general criteria: (1) [T]hey are approved as safe and effective; (2) they are pharmaceutical equivalents in that they (a) contain identical amounts of the same active drug ingredient in the same dosage form and route of administration, and (b) meet compendial or other applicable standards of strength, quality, purity, and identity; (3) they are bioequivalent in that (a) they do not present a known or potential bioequivalence problem, and they meet an acceptable in vitro standard, or (b) if they do present such a known or potential problem, they are shown to meet an appropriate bioequivalence standard; (4) they are adequately labeled; (5) they are manufactured in compliance with Current Good Manufacturing Practice regulations" (Orange Book Preface at vii, available at http://www.fda.gov/downloads/Drugs/DevelopmentApprovalProcess/UCM071436.pdf. (FDA has verified the Web site addresses, as of the date this document publishes in the Federal Register, but Web sites are subject to change over time.)).

BE guidance is available on FDA's Web site and will be placed in Docket No. FDA-2016-N-3120.

On November 12, 2014, representatives from OGD and other CDER offices notified Kremers by telephone of CDER's concerns regarding its generic product. OGD explained that the TE rating for the product would be changed from AB to BX immediately. OGD requested that Kremers: (1) Voluntarily withdraw its product from the market under § 314.150(d) (21 CFR 314.150(d)) and request that FDA withdraw approval of the ANDA or (2) confirm bioequivalence of its product within 6 months, consistent with the recommendations in the revised draft BE guidance issued on November 6, 2014. Kremers declined to voluntarily withdraw its product from the market. In June 2015, Kremers submitted data from new BE studies that were conducted in accordance with the design recommended in the revised draft BE guidance; these data are discussed in section I.B.2.b.

b. <u>Post-TSI investigations</u>. After communicating CDER's concerns to Kremers about its methylphenidate product and changing the TE rating for the product to BX, CDER continued to evaluate data and information related to the bioequivalence of Kremers' product to CONCERTA. CDER reanalyzed the BE data originally submitted in Kremers' ANDA in accordance with the recommendations provided in the November 6, 2014, revised draft BE guidance. The reanalysis showed that the 54-mg Kremers product on which the in vivo BE testing was conducted does not provide the same extent of methylphenidate exposure as CONCERTA during the 7- to 12-hour post-dosing time period under fasting conditions and 8- to 12-hour post-dosing time period under fed conditions. Specifically, the 90 percent confidence interval (CI) of the geometric mean ratio of the test product (Kremer's) to reference product

(CONCERTA) for AUC₇₋₁₂⁶ under fasting conditions (at 73.06 percent to 85.92 percent) falls outside of the 80 percent to 125 percent BE acceptance range (Ref. 3). The 90 percent CI of the geometric mean ratio of the test to reference product for AUC₈₋₁₂⁷ under fed conditions (at 76.19 percent to 83.09 percent) also falls outside of the 80 percent to 125 percent BE acceptance range. The lower level of methylphenidate exposure compared to CONCERTA at 7 to 12 hours (under fasting conditions) and 8 to 12 hours (under fed conditions) after tablet administration is consistent with the reports received describing lack of therapeutic effect later in the day.

In light of the close relationship between the PK profile and therapeutic effect of methylphenidate products (Refs. 4 and 5), FDA performed a clinical trial simulation based on the BE data submitted in the ANDA to predict the potential clinical significance of the difference in PK profile, i.e., methylphenidate absorption, of the Kremers product compared to CONCERTA. The simulation suggested some potential difference in effect between Kremers' product and CONCERTA after 6 hours post-dosing. The greatest mean percentage reduction in efficacy for the Kremers product was predicted to be 13.12 percent at 10 hours post-dosing, with individual changes ranging from a 37.76 percent decrease and an 18.22 percent increase in efficacy compared with CONCERTA.

In addition to a reanalysis of data submitted in the original ANDA, FDA also reviewed BE data submitted by Kremers in June 2015. Kremers conducted fully replicated BE studies under fasting and fed conditions using the 54-mg strength product, in accordance with the recommendations in the revised draft BE guidance. FDA independently analyzed the data

⁶ The area under the plasma concentration-time curve (AUC) is used to evaluate the extent of absorption of a drug (see section 505(j)(7)(B) of the FD&C Act). AUC₇₋₁₂ captures the extent of absorption from 7 to 12 hours post-dosing (see, e.g., the draft guidance for industry entitled "Bioequivalence Studies With Pharmacokinetic Endpoints for Drugs Submitted Under an ANDA" (Ref. 2)).

⁷ AUC₈₋₁₂ captures the extent of absorption from 8 to 12 hours post-dosing.

submitted and found that Kremers' product failed to meet the criteria for bioequivalence under fed conditions because it did not provide the same extent of methylphenidate exposure as CONCERTA during the 8- to 12-hour time period after administration.

Finally, FDA analyzed FAERS reports from February 2014 to May 2015. The types and quality of reports received by FDA during that time period were very similar to the FAERS reports received before the change in TE rating. The reports continued to contain specific complaints describing the lack of therapeutic effect during the latter part of the day.

A memorandum describing in detail the information considered following the TSI and explaining CDER's determination will be placed in Docket No. FDA-2016-N-3120 (Ref. 6).

II. Conclusions and Proposed Action

An NDA (or reference listed drug) applicant must submit "full reports of investigations" to show that the drug for which the applicant is seeking approval is safe and effective. In other words, reference listed drugs must meet the safety and substantial evidence of effectiveness standard (see section 505(b)(1), (b)(2), (c), and (d) of the FD&C Act). A reference listed drug applicant can meet the standard by conducting its own clinical studies (stand-alone application) or relying, in part, on the Agency's previous finding of safety and/or effectiveness or literature (a 505(b)(2) application). An ANDA applicant does not submit independent clinical studies to demonstrate safety and effectiveness. Rather, an ANDA applicant relies on the Agency's previous finding of safety and effectiveness for the reference listed drug and is required to meet other requirements, such as demonstrating bioequivalence to the reference listed drug to support approval. In the absence of information showing bioequivalence between the generic drug at issue and the reference listed drug, there is no basis for concluding that the Agency's finding of

safety and efficacy (or substantial evidence of effectiveness) supporting approval of the reference listed drug likewise supports approval of the generic drug.

Therefore, based on all available data and information, notice is given to Kremers and to all other interested persons that the Director of CDER proposes to issue an order, under section 505(e)(3) of the FD&C Act and § 314.150(a)(2)(iii), withdrawing approval of ANDA 091695 and all amendments and supplements to it on the grounds that, on the basis of new information, evaluated together with the evidence available when the application was approved, there is a lack of substantial evidence that the drug will have the effect it is represented to have under the conditions of use prescribed, recommended, or suggested in its labeling.

III. Hearing Procedures

In accordance with section 505(e) of the FD&C Act, the applicant is hereby provided an opportunity to request a hearing to show why approval of ANDA 091695 should not be withdrawn and an opportunity to raise, for administrative determination, all issues relating to the legal status of the drug product covered by this application.

An applicant who decides to seek a hearing must file the following: (1) A written notice of participation and request for hearing (see DATES) and (2) the data, information, and analyses relied on to demonstrate that there is a genuine and substantial issue of fact that requires a hearing to resolve (see DATES). Any other interested person may also submit comments on this notice. The procedures and requirements governing this notice of opportunity for a hearing, notice of participation and request for a hearing, the information and analyses to justify a hearing, other comments, and a grant or denial of a hearing are contained in § 314.200 (21 CFR 314.200) and in 21 CFR part 12.

The failure of an applicant to file a timely written notice of participation and request for a hearing, as required by § 314.200, constitutes an election by that applicant not to avail itself of the opportunity for a hearing concerning CDER's proposal to withdraw approval of the application and constitutes a waiver of any contentions concerning the legal status of the drug product. FDA will then withdraw approval of the application, and the drug product may not thereafter be lawfully introduced or delivered for introduction into interstate commerce. Any new drug product introduced or delivered for introduction into interstate commerce without an approved application is subject to regulatory action at any time.

A request for a hearing may not rest upon mere allegations or denials, but must present specific facts showing that there is a genuine and substantial issue of fact that requires a hearing. If a request for a hearing is not complete or is not supported, the Commissioner of Food and Drugs will enter summary judgment against the person who requests the hearing, making findings and conclusions, and denying a hearing.

All submissions under this notice of opportunity for a hearing must be filed in two copies. Except for data and information prohibited from public disclosure under 21 U.S.C. 331(j) or 18 U.S.C. 1905, the submissions may be seen in the Division of Dockets Management (see ADDRESSES) between 9 a.m. and 4 p.m., Monday through Friday, and will be posted to the docket at http://www.regulations.gov.

This notice is issued under section 505(e) of the FD&C Act and under the authority delegated to the Director of CDER by the Commissioner of Food and Drugs.

IV. References

The following references are on display in the Division of Dockets Management (see ADDRESSES) and are available for viewing by interested persons between 9 a.m. and 4 p.m.,

Monday through Friday; they are also available electronically at http://www.regulations.gov. FDA has verified the Web site addresses, as of the date this document publishes in the <u>Federal Register</u>, but Web sites are subject to change over time.

 FDA, draft guidance for industry, "Bioequivalence Recommendations for CONCERTA (Methylphenidate Hydrochloride) Extended-Release Tablets," November 2014 (available at

http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM320007.pdf).

 FDA, draft guidance for industry, "Bioequivalence Studies With Pharmacokinetic Endpoints for Drugs Submitted Under an ANDA," December 2013 (available at

http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM 377465).

- 3. Dighe, S. V. and W. P. Adams, "Bioequivalence: A United States Regulatory Perspective." In: Welling, P. G., L. S. Tse, and S. V. Dighe, eds., <u>Pharmaceutical Bioequivalence</u>. New York: Marcel Dekker, Inc., pp. 347-380, 1991.
- 4. Swanson, J. M., S. B. Wigal, T. Wigal, et al., "A Comparison of Once-Daily Extended-Release Methylphenidate Formulations in Children With Attention-Deficit/Hyperactivity Disorder in the Laboratory School (The Comacs Study),"

 Pediatrics, vol. 113, pp. 206-216, 2004.
- 5. Kimko, H., E. Gibiansky, L. Gibiansky, et al., "Population Pharmacodynamic Modeling of Various Extended-Release Formulations of Methylphenidate in Children

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With Attention Deficit Hyperactivity Disorder Via Meta-Analysis," Journal of

Pharmacokinetics and Pharmacodynamics, vol. 39(2), pp. 161-176, 2012.

6. Memorandum to Janet Woodcock, Director, Center for Drug Evaluation and

Research, in Support of Beginning Approval Withdrawal Proceedings for ANDA 091695

(October 1, 2016, Peters).

Dated: October 12, 2016.

Janet Woodcock,

Director,

Center for Drug Evaluation and Research.

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